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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,840	09/09/2003	Ralph R. Dammel	2003US301/CIP	3016

7590 03/24/2005

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EXAMINER
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CHU, JOHN S Y

ART UNIT	PAPER NUMBER
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1752

DATE MAILED: 03/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/658,840	DAMMEL ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	John S. Chu	1752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 January 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 18-27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>9/9/03, 10/1, 11/16</u>   | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

This Office action is in response to the election received January 12, 2005.

1. Applicant's election with traverse of the invention elected in the reply filed on January 12, 2005 is acknowledged. The traversal is on the ground(s) that injection molding uses powder or granulated thermoplastics and applicants have amended the claims to include a solvent making the composition as solvent. This is not found persuasive because the claim as presented could contain minuscule amounts of solvent so as to remain a solid material that can be used in injection mold.

The examiner however will rejoin the method claims upon indication of allowance of the product claims, if the scope to the product and the use of the product in the method claims are identical. This practice being based on *In re Ochiai*.

The requirement is still deemed proper and is therefore made FINAL.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 fails to further limit the polymer unit of claim 1, structure 1. It is not clear how those structures in claim 4 relate to structure 1 in claim 1, because the cyclic groups are not clear as to how they further limit the linear of structure 1.

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Claim 7 “n” is undefined.

Claim 10 is not clear as to which polymer the claim refers (polymer having structure 1).

Claims 11 are unclear as to how named polymers reflect structure 1 of claim 1 wherein structure 1 has a carboxyl group and the nomenclature in claim 11 fails to name a carboxyl type structure in the defined polymer (ester, carbonyloxy, etc.)

Claim 12 and 13 fail to further limit the scope of claim 1 and is an improper dependent claim, because the polymer to which claim 12 refers fails to mention structure 1 and goes on to recites polymer mixtures.

Correction is necessary.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

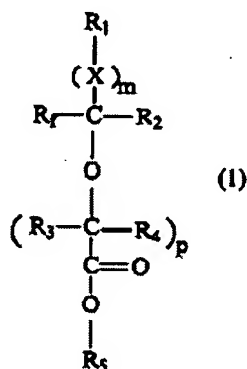
(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-17 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by. as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over ITO et al ‘219.

The claimed invention is drawn to the following:

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1 (currently amended). A photoresist composition comprising a photoacid generator, a solvent and at least one novel polymer comprising at least one unit as described by structure 1,



where, either

(i)  $R_1$  is an aliphatic cyclic unit of a polymer,  $R_2$  is selected from H, F,  $(C_1-C_8)$ alkyl,  $(C_1-C_8)$ fluoroalkyl, cycloalkyl, cyclofluoroalkyl, and  $(CR_3R_4)_p(CO)OR_5$ , and  $R_1$  is selected from F, H,  $(C_1-C_8)$ alkyl, or a fully or partially fluorinated alkyl, and cyclofluoroalkyl, or

(ii)  $R_1$  and  $R_2$  combine to form an aliphatic cyclic unit of a polymer, and  $R_1$  is selected from F, H,  $(C_1-C_8)$ alkyl and a fully or partially fluorinated alkyl, and cyclofluoroalkyl, or

(iii)  $R_1$  and  $R_1$  combine to form an aliphatic cyclic unit of a polymer, and  $R_2$  is selected from H, F,  $(C_1-C_8)$ alkyl,  $(C_1-C_8)$ fluoroalkyl, cycloalkyl, cyclofluoroalkyl, and  $(CR_3R_4)_p(CO)OR_5$ ; and,

$R_3$  and  $R_4$  are independently H, F,  $(C_1-C_8)$ alkyl,  $(C_1-C_8)$ fluoroalkyl, cycloalkyl, cyclofluoroalkyl,  $(CR_3R_4)_p(CO)OR_5$ ,  $R_3$  and  $R_4$  may combine to form an alkylspirocyclic or a fluoroalkylspirocyclic group,

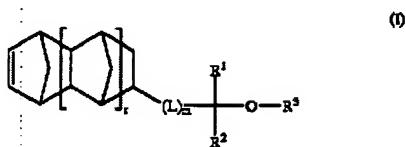
X is selected from  $(C_1-C_8)$ alkylene,  $(C_1-C_8)$ fluoroalkylene,  $O(C_1-C_8)$ alkylene,  $O(C_1-C_8)$ fluoroalkylene, cycloalkyl and fluorinated cycloalkyl,

$R_5$  is H or an acid labile group,  $m=0-1$ , and  $p=1-4$ .

ITO et al discloses a chemically amplified photoresist composition comprising the following teaching in column 5, lines 1-17:

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5



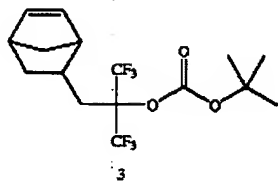
wherein m is zero or 1, r is zero or 1, L is an alkylene or oxyalkylene linking group, R<sup>1</sup> is linear or branched fluoroalkyl, R<sup>2</sup> is linear or branched alkyl or fluoroalkyl, and R<sup>3</sup> is hydrogen, alkyl (preferably lower alkyl), —C(O)—R, —CH<sub>2</sub>—C(O)OR, —C(O)OR or Si(R)<sub>3</sub> wherein R is alkyl, preferably lower alkyl (e.g., R<sup>3</sup> may be —C(O)OC(CH<sub>3</sub>)<sub>3</sub>, —CH<sub>2</sub>C(O)OC(CH<sub>3</sub>)<sub>3</sub>, —C(O)CH<sub>3</sub>, or —Si(CH<sub>3</sub>)<sub>3</sub>), and at least one additional monomer having the structure (II)

wherein this structure anticipates the claimed invention

having the claimed unit of structure 1.

Applicants are further directed to Example 5 in column

15, line 42 – column 16, et seq. wherein the following monomer is made:



This monomer is used to prepare a polymer as disclosed in claims of ITO et al. In addition the copolymer made in ITO et al is used in composition comprising an acid generator, see claim 24, column 19, line 63 – column 20, line 29.

Alternatively, it would have been *prima facie* obvious to one of ordinary skill in the art of photoresist compositions to select the preferred side group as recited in column 15, line 16 as seen here: —CH<sub>2</sub>C(O)OC(CH<sub>3</sub>)<sub>3</sub>, —C(O)CH<sub>3</sub>, and reasonably expect same or similar results with respect to transparency in deep UV light.

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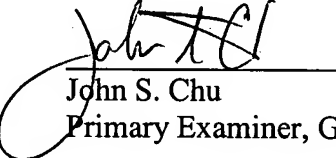
6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. NAITO et al is cited of interest to disclose photoresist composition comprising fluoroalkyl groups off of cyclic alkylene monomers.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Chu whose telephone number is (571) 272-1329. The examiner can normally be reached on Monday - Friday from 9:30 am to 6:00 pm.

The fax phone number for the USPTO is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-1700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PMR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
John S. Chu  
Primary Examiner, Group 1700

J.Chu  
March 20, 2005